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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,855	09/23/2003	Torsten Niederdrank	P03,0381	3145
26574	7590	08/24/2007	EXAMINER	
SCHIFF HARDIN, LLP			LAO, LUN S	
PATENT DEPARTMENT				
6600 SEARS TOWER			ART UNIT	
CHICAGO, IL 60606-6473			PAPER NUMBER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/668,855	NIEDERDRANK ET AL.	
	Examiner	Art Unit	
	Lun-See Lao	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1 This action is in response to the amendment filed on 06-12-2007. Claims 2 and 9 have been amended. Claims 1-14 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 5-6 and 8, 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Williamson et al. (US PAT. 5,091,952).

Consider claim 1 Williamson teaches a device (see fig.6) for feedback compensation in hearing devices, comprising:

a signal input device (300) configured to acquire an input signal that is influenced by a feedback (acoustic feedback);

a feedback reduction device (+, - sign, (309)) for adjustable reduction, compensation, or damping of the feedback, and

a signal output device (304) configured to output an output signal with a reduced feedback portion; and

an estimation unit (310) that is connected between the signal input device (300) and the feedback reduction device (+ -, sign, 309), and with which an estimated value of a

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system distance (see col. 8 line 6-9) that is defined by a distance of loop gain of the feedback system to its predetermined stability limit can be determined from the input signal (see fig.6, between output signal and speech signal (acoustic feedback) and see col. 8 line 6-9), such that parameters of the feedback reduction device are controllable using the estimated value (see col.8 line 1-col. 9 line 36).

Consider claims 5-6 Williamson teaches that the feedback reduction device (see fig.6 (+- sign, 309)) comprises a feedback compensator (see fig.6 and col. 8 line1- 68), and the feedback reduction device (see fig.6 (+, - sign, 309)) comprises an amplification/compression control (see fig.6 and col. 8 line1- 68).

Consider claims 8 and 12-13 are essentially similar to claims 1 and 5-6 and are rejected for the reason state above apropos to claims 1 and 5-6.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-4 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson et al. (US PAT. 5,091,952) in view of Kates (US PAT. 6,831,986).

Consider claim 2 Williamson does not explicitly teach that the estimation device is configured to detect a first signal portion and a second signal portion from the input signal, to generate an estimated signal from the first signal portion for the second signal

portion utilizing a model from the first signal portion, and to determine an estimated value from a difference of the estimated signal and the second signal portion.

However, Kates teaches that the estimation device (see fig.4 (423 or 421) and fig.9) is configured to detect a first signal portion (901 in fig.9) and a second signal portion (903 in fig.9) from the input signal, to generate an estimated signal from the first signal portion for the second signal portion utilizing a model, and to determine an estimated value from a difference of the estimated signal and the second signal portion (see fig.9 and col.10 line 46-col. 11 line 42).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Kates into Williamson to improve the gain at high frequencies while simultaneously preserving the desired tonal inputs at low frequencies.

Consider claims 3-4 Kates teaches the first signal portion corresponds to a high-frequency portion of the input signal, and the second signal portion corresponds to a low-frequency portion of the input signal (see fig.9 (901,903) and col.10 line 46-col. 11 line 42 and discussion above claim 2); and the estimation device comprises a feature extractor configured to extract features from the first and second signal portions for further processing (see fig.9 (901,903) and col.10 line 46-col. 11 line 42 and discussion above claim 2).

Consider claims 9-11 are essentially similar to claims 2-4 and are rejected for the reason state above apropos to claims 2-4.

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6. Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williamson et al. (US PAT. 5,091,952) in view of Wagner (US PAT. 4,845,757).

Consider claim 7 Williamson fails to teach that the feedback reduction device comprises at least one oscillation detector and at least one narrow-band filter device to suppress oscillations based on the estimated value.

However, Wagner teaches that the feedback reduction device (see fig.1 (4)) comprises at least one oscillation detector (6) and at least one narrow-band filter device (8 and see col.6 line 7-23) to suppress oscillations based on the estimated value (see col. 2 line 66-col. 3 line45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Wagner into Williamson to improve the voice signal.

Consider claim 14 is essentially similar to claim 7 is rejected for the reason state above apropos to claim 7.

Response to Arguments

7. Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argued that Williamson does not disclose "distance of loop gain of the feedback system to its predetermined stability limit" as recited in claim 1 and claim 8 (see remarks page 8 3rd paragraph).

The examiner disagrees. Williamson teaches an estimation unit (310) that is connected between the signal input device (300) and the feedback reduction device (+ - , sign, 309), and with which an estimated value of a system distance (see col. 8 line 6-9) that is defined by a distance of loop gain of the feedback system to its predetermined stability limit can be determined from the input signal (see fig.6, between output signal and speech signal (acoustic feedback) and see col. 8 line 6-9). It meets limitation as recited in claim 1 and claim 8.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kates (US 2003/0053647) is cited to show other related the feedback compensation for hearing devices with system distance estimation.

10. Any response to this action should be mailed to:

Mail Stop ____ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:

(703) 872-9306

Hand-delivered responses should be brought to:

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao,Lun-See *L.S.*
Patent Examiner
US Patent and Trademark Office
Knox
571-272-7501

Date: 08-10-2007


VIVIAN CHIN
SUPERVISOR PATENT EXAMINER
TECHNOLOGY CENTER 2600